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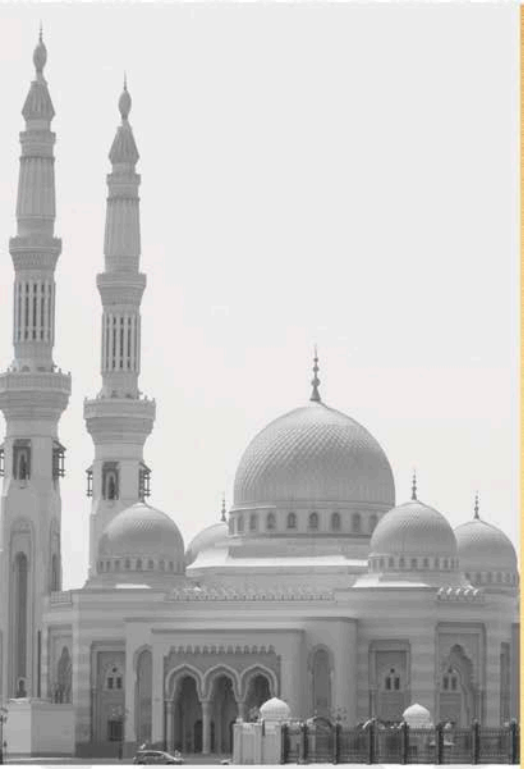

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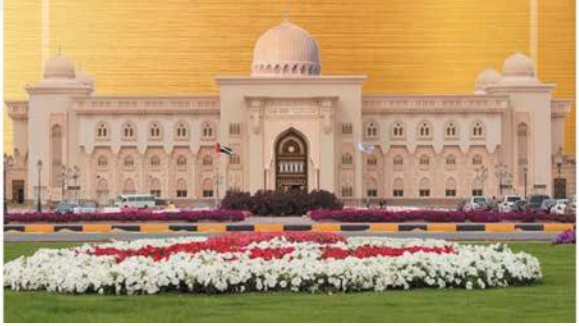

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قضايا مهمة في التكيف الفقهي للعُملات المشفرة

VITAL ISSUES FOR THE JURISPRUDENTIAL ADAPTATION OF CRYPTOCURRENCIES[1]

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الملخص

سَعت الدراسة عبر منهجي تحليلي قائم على الاستقراء والاستنباط إلى تسليط الضوء على مسائل تحسب أنها من الأهمية بمكان عند التكييف الفقهي للعملات الرقمية المشفرة. والقضايا التي تعرضت لها الدراسة هي: (1) تعريف العملات المشفرة وأصل نشأتها وأنواعها؛ (2) القيم الذاتية في مقابل القيم التبادلية للعملات الرقمية المشفرة، (3) العملات الرقمية المشفرة وخصائص النظم النقدية في الاقتصادات المعاصرة؛ و(4) التكيف الفقهي لهذه العملات. لفتت الدراسة من خلال هذا المدخل المنهجي إلى أهمية الانتباه إلى الظروف المحيطة بالنظم النقدية والمالية وتطور عملها وتعدد أشكال النقود فيها، وأشارت إلى أن التوصل إلى حكم فقهي رصين بشأن العملات المشفرة غير ممكن دون الأخذ في الاعتبار التعقيد والغموض والعواقب والآثار البعيدة المدى المرتبطة بطبيعة عمل هذه النظم. من بين المسائل التي تم التأكيد عليها في الدراسة حقيقة أن القسم الأكبر (90٪ +)

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من حجم الكتلة النقدية في معظم البلدان، يتم توليدها من العدم بطريقة غامضة ومعقدة، كدَيْن على المتعاملين الاقتصاديين؛ أفرادًا وشركات وحكومات، من قبل البنوك التجارية الخاصة في شكل رقمي دون أي غطاء مادي في شكل إيداعات نقدية مُسبقة؛ ناهيك عن أصول سلعية كالذهب أو الفضة. أكدت الدراسة على هذه النقاط بعد أن قامت بمسح واسع للأدبيات الكثيرة المكتوبة حول هذا الموضوع، من قبل فقهاء وخبراء في الاقتصاد الإسلامي والمجالات ذات الصلة من خلال تكرار جوانب الطابع الرقمي غير المغطى والإصدار الخاص للعملات الرقمية المشفرة للتوصل إلى حرمتها. إن اتباع هذه المنهجية لا يعني بحال الحكم بشرعية الممارسات الحالية للعملات الرقمية، وإنما بغرض التأكيد على أن تجاهل و/أو التغاضي عن الواقع المعقد والغامض للنظم النقدية والمالية المعاصرة، في التعامل مع موضوع العملات الرقمية المشفرة بمعزل عن أشكال النقود الأخرى؛ وخاصة التي يتعامل الناس بها على نطاق واسع، قد يؤدي إلى حكم فقهي غير سديد.

Abstract

Through inductive, deductive, and analytical methodologies this study aims at shedding light on some important issues to facilitate a sound *Sharī'ah* verdict on cryptocurrencies. The issues are: (1) definition, origin, and types of cryptocurrencies; (2) the intrinsic and exchange values of cryptocurrencies, (3) cryptocurrencies and the peculiarities of the monetary ecosystem in modern economies; and (4) the jurisprudential adaptation of these newly emerging currencies. In following this synthesis, this study drew attention to the crucial circumstances and development of the prevailing monetary and financial system. This study points out the fact that reaching a sound ruling on cryptocurrencies cannot be attained without taking into consideration the complexity, ambiguity, and far-reaching consequences and implications inherently associated with the dominant monetary system. Among the realities unveiled in this study is the fact that the majority (90%+) of the money supply, in most jurisdictions, is created *ex-nihilo*, as debt, by private commercial banks

in digital form without the backing of any hard fiat money, let alone a tangible asset like gold. This study emphasizes these points having surveyed the extensive literature written on the subject, by jurists and other experts in Islamic economics and related domains on the reiteration of the digitalization and private issuance aspects, in order to consider the injunction of cryptocurrencies. This does not imply a validation of the current practices of cryptocurrencies, but ignoring and/or overlooking the complex and ambagious reality of the contemporary monetary and financial system, in dealing with the subject of cryptocurrencies in isolation, may lead to an improper jurisprudential ruling.

الكلمات الدالة: العملات الرقمية المشفرة، بِتْكُوين، سلسلة الكتل، الحكم الشرعي، مجمع الفقه الإسلامي الدولي، النقود الورقية، خلق النقود.

Keywords: Cryptocurrencies, Bitcoin, Blockchain, *Sharī'ah* ruling, International Islamic Fiqh Academy, Fiat money, Money creation.

1.0 Introduction

The rise and spread of cryptocurrencies have grown considerably in the aftermath of the American financial crisis in 2007-2008, or the so-called global financial crisis (GFC). This rise caught much attention at all levels; personal, institutional, local, and global, in the recent past. This has led to many activities and initiatives, such as studies, research, and private and public conferences. Some Islamic figures and bodies had, and still have, an interest in this issue to come up with a 'sound' jurisprudential opinion. Given the technical ambiguity, the dynamism and complexity of how this type of "currencies" work (CBJ, 2020, p.7; ECB, 2012, p.23), the International Islamic Fiqh Academy (IIFA) of OIC countries preferred, as usual, to wait for more rigor investigations before issuing a verdict, by conducting further research and study on issues affecting their ruling, as stated on resolution No. 237 (8/24) of the 24th session of the Academy that took place in Dubai in 2019 (IIFA, 2019).

The importance of the issue of cryptocurrencies is underscored by the fact that the number of these types of currencies is increasing and spreading over time. In a study prepared by three researchers found that the number of these currencies exceeds 1,800 (Foley et al., 2019, p.1798). Nearly two years later, two other researchers indicated that the number exceeds 8,000 (Gorton & Zhang, 2021, p.3). If the data of the two studies are correct, this means that the number of these currencies has tripled (344%) in a short period, which is a dramatic increase. A year thereafter, in 2022, the market of the cryptos saw an unprecedent event of the collapse of the biggest trading platform; the FTX of crypto assets. That event resulted in a loss of billions of dollars, letting the market value of the cryptos fall well below the threshold of a $1 trillion valuation, (Reiff, 2023). These developments within a very short period reflect the very high volatility nature of these 'currencies'.

The interest of central banks in cryptocurrencies, in general, and in issuing their central banks digital currencies (CBDCs), in particular, has increased remarkably as well. According to the latest findings of the Atlantic Council "130 countries, representing 98 percent of global GDP, are exploring a CBDC. In May 2020, only 35 countries were considering a CBDC. A new high of 64 countries are in an advanced phase of exploration (development, pilot, or launch)…19 of the G20 countries are now in the advanced stage of CBDC development…11 countries have fully launched a digital currency" (Atlantic Council, 2023).

In this regard, the Governor of the Swedish Central Bank, the world's oldest central bank, notes that the issuance of digital currencies by central banks to the public "is a practical, not a hypothetical matter … within 10 years [population of the world] will almost exclusively be paying digitally, both in Sweden and in many parts of the world..." (Ingves, 2018, p.12).

Regardless of the reason of interest and the expectations of the future of cryptocurrencies, the jurisprudence academies and the *Sharī'ah* bodies have a 'moral responsibility' for issuing a ruling surrounding the existence and use of these currencies. A verdict that is sound and comprehensive in its scope and coverage, because the *fatwās* of individuals and prominent figures may be inadequate to

reach such a ruling in a complex matter as stated earlier. To help in attaining this goal this research draws attention to some vital issues that must be explored thoroughly within the context of the prevailing monetary and financial system that operates in almost all parts of the world.

The remainder of the paper is structured as follows: section two is devoted to the definition, origin, and types of cryptocurrencies. Section three deals with two important issues that have received little attention in the Islamic economics literature that have dealt with the *Sharī'ah* ruling on these currencies. These are: the intrinsic and exchange values of cryptocurrencies, and cryptocurrencies and the peculiarities of the monetary ecosystem in modern economies. Section four reviews and discusses the bases upon which the verdicts of some jurists and/or jurisprudential bodies have been developed to issue a verdict on cryptocurrencies. Section five concludes with important remarks and recommendations.

2.0 Cryptocurrencies: Definition, Origin and Types

Among the points that the IIFA sought to address is the issue of determining the exact nature of a cryptocurrency; "is it a commodity, a benefit, an investment financial asset or a digital asset?" (IIFA, 2019). This aspect is of paramount importance, because passing a judgment on something is dependent on having a proper perception thereof; "reaching a ruling on something is based on its proper perception". Without an accurate and deep conception of its presumptions from primary sources of that thing, the description will be inadequate to rely on to deliver an appropriate *Sharī'ah* verdict.

2.1 Satoshi Nakamoto's Paper and the Emergence of the First Cryptocurrency

The starting point in the definition of a cryptocurrency is the famous white paper that appeared in 2008 appended with the name of Satoshi Nakamoto (Nakamoto (2008), whose identity is still unknown: is he/she a single person and/or a group of people? Who did the peculiar programming that led to the emergence of the first cryptocurrency; Bitcoin in 2009, (Bouveret & Haksar, 2018, p.27; Perkins, 2020, p.1). Much has been written about these questions, but they are irrelevant in

the context of the main aim of the study. What is relevant is the foundations mentioned in the paper, which represent a milestone in the realm of business, money, and payment systems. In what follows is a thorough review of existing definitions provided by renowned entities from different parts of the world.

The importance of this approach is underscored by the confusion surrounding most of the definitions that have been explored in the abundant literature that has dealt with this topic. This confusion may reach the point of contradiction in some of these writings in their attempt to develop an 'exhaustive' definition to this type of currencies. Some expanded the definition and others restricted it; some have ignored the dynamic nature of the development of these currencies and the varying stances of countries towards them, which may hinder the distinction between constant and changing attributes of these currencies; some did not pay attention to the precise distinction between some of the overlapping, rather vague technical terms, with reference to 'coins', 'tokens' and 'digital assets' (SRB, 2018, p.5), which may confuse the reader regarding the question, which is simple in structure but profound in implications: What are we talking about? Adopting such a methodology will facilitate, to some extent, the definition that this paper will elaborate. While recognizing the importance of this approach, it should be noted that the practical reality of these currencies is complex and highly intertwined due to their vast diversity and wide proliferation.

At first glance, the title of Nakamoto's paper was clear that the purpose of Bitcoin is "to create a peer-to-peer electronic cash system". The first lines in the paper's abstract emphasized the endeavor that is intended to be achieved; "a purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution" (Nakamoto, 2008, p.1).

This proposition, if it succeeds, would undermine the core foundations of the business model of the prevailing monetary system; because it falls within the circle of "disruptive innovation" (BIS, 2015, p.3). Therefore, it poses a real threat to the prevailing monetary and financial system, given the fact that the technology on which these currencies were based has proven its soundness and resilience (Adrian

and Weeks-Brown, 2021). This was evident during the long period since the appearance of the first cryptocurrency, in 2009, till now. The technology also contributed to solving two main problems that prevented the emergence of these currencies before 2009, despite the attempts that appeared at the end of the eighties and the beginning of the nineties of the last century (Bech and Garratt, 2017, p.59; Auer *et al*., 2020, p.3; Luther, May 6, 2021). The two main problems solved by the blockchain distributed ledger technology (DLT) are: trust and double spending or counterfeiting.

It can be concluded from the above-mentioned discussion that Bitcoin, and the like, were originally intended to replace the well-established forms of money and currencies that people have used for quite a long time, but in a 'non-physical/virtual) form. Its work will completely depend on the internet and technology (pure electronic cash). This entails that, at the current stage, it is traded in a limited and specific "virtual space", and it will be in the form of digits generated through highly sophisticated and complex algorithms, without being subject to the regulations and laws of the prevailing monetary and financial system, nor passing through its usual institutions in almost all jurisdictions over the globe.

The above-mentioned elements represent the main pillars of the 'exhaustive' definition, to which are added two important elements: cryptography and time, i.e., the date of the "issuance/generation" of the first of this type of currency.

To what extent are these elements present in prevailing definitions of cryptocurrencies? Can these elements be embodied in an 'all-encompassing' definition? Will this achieve the desired goal of reaching a comprehensive jurisprudential adaptation that covers the types and forms of currencies recently created? Or such a goal is beyond reach?

2.2 Definition of Cryptocurrencies

To answer the previous questions, this study presents a selection of definitions from different global economic and financial institutions and central banks. Thereafter, this study presents a definition to define the exact nature of a cryptocurrency.

1. The World bank (WB); considered digital currencies as "digital representations of value that are denominated in their own unit of account, distinct from e-money, which is simply a digital payment mechanism, representing and denominated in fiat money" (Natarajan, et al., 2017, p.IV) The study distinguished between two primary terms. These are: digital currency and cryptocurrency because the former is more general than the latter.
2. The International Monetary Fund (IMF) defined virtual currencies as "representations of value, issued by private developers and denominated in their own unit of account," (He, et al., 2016, p.7). The authors noted that the concept of virtual currencies covers several types, including cryptocurrencies such as Bitcoin; however, they consider the virtual currencies as a subclass of a broader concept, which is digital currencies.
3. The Bank for International Settlements (BIS) noted that the term 'digital currencies' "is not perfect, [but it] is used widely and reflects the concept that these are assets represented in digital form" (BIS, 2015, p.1). Thus, the bank does not provide a definition to the term, but it gave the impression that these currencies are 'assets in a digital form'. It is the shortest definition found by the researcher. However, in the main body of the paper, authors presented the distinctive characteristics of what it called "digital currencies"; and in the footnotes, it explained that these "assets (such as Bitcoin)" may perform some of the functions of money, but they can be viewed as an asset [such as stocks and bonds] rather than a currency. However, they are in a digital (non-physical) form or a commodity," (BIS, 2015, p.1).
4. The European Central Bank (ECB), on its part, defined virtual currency as "a type of unregulated[2], digital money, which is

[2] The Financial Action Task Force (FATF) noted the limited scope of the definition. It was valid at the time of the publication the study. This is due to the developments that occurred thereafter when some countries, such as the United States, Sweden, and Thailand, introduced some 'sort' of regulation to 'virtual currencies', (FATF, 2014, p.13). In fact, the authors of the study of the ECB did take a note of this limitation stating that 'the definition may need to be modified if changes occur to some of the basic factors affecting it',

issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community", (ECB, 2012, p.5 and p.13). Under this broad definition of a virtual currency the ECB made a distinction between three schemes; closed virtual currency schemes (= used only for virtual goods and services), virtual currency schemes with unidirectional flow (= can be used for virtual and real goods and services), and virtual currency schemes with bi-directional flow (= Can be used for virtual and real goods and services), (ECB, 2012, pp.13-15). Furthermore, despite the use of the word "currency", the ECB "does not regard virtual currencies, such as Bitcoin, as full forms of money as defined in economic literature", (ECB, 2015, p.4). This categorization and declaration by the ECB show, once again, the opaqueness surrounding the terminologies used in the literature. Thus, the use of terms like electronic, virtual, or even digital does not portray the distinguishing characteristics of these currencies.

5. The European Banking Authority (EBA) defined virtual currency as "a digital representation of value that is neither issued by a central bank or public authority nor necessarily attached to a conventional fiat currency but is accepted by natural or legal persons as a means of exchange and can be transferred, stored or traded electronically," (EBA, 2014, p.4). After five years of addressing the matter of virtual currencies, EBA issued a report that included guidance for the European Commission on dealing with "crypto assets" in which virtual currencies were included, (EBA, 2019, p.4). Thus, the ambiguity appears once again in defining what we are addressing: is it a currency or an asset?
6. The Congressional Research Service (CRS), in one of its studies, defined cryptocurrency as "digital money in an electronic payment system in which payments are validated by a decentralized network of system users and cryptographic protocols instead of by a centralized intermediary (such as a bank)" (Perkins, 2020, p.1).

(ECB, 2012, p.5).

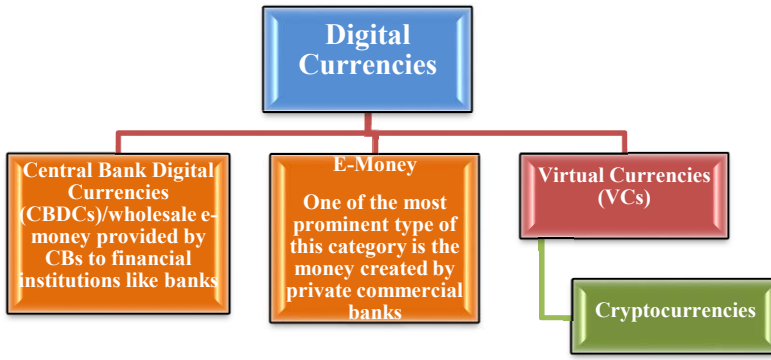
7. Finally, the Financial Action Task Force (FATF), on its part, defined virtual currencies as "a digital representation of value that can be digitally traded and functions as a (1) medium of exchange; and/or (2) a unit of account; and/or (3) a store of value but, does not have legal tender status in any jurisdiction," (FATF, 2014, p.4).

From the above definitions, the following observations can be made:

1. The lack of agreement between these renowned bodies and institutions upon an "all-encompassing" definition of cryptocurrencies that accurately clarifies the boundaries separating these 'currencies' from other forms of money in contemporary economies.
2. Different approaches have been pursued in the elaboration of the definitions; narrowness vs. expansion on one hand, and the influence by circumstantial factors that were present at the time of the development of the definition on the other.
3. Inconsistency in some instances: Are these 'cryptos': currencies, assets, or commodities? Or something else? Do they perform all standard technical functions of money as discussed in the economic literature?
4. The circumstantial and limited nature of some definitions do not reflect the dynamic nature that characterizes the development of these currencies. This is the result of a lack of distinction between constant and non-constant features. However, some were cautious when noting that the definition may change, with the changes that may occur to circumstantial factors (ECB, 2012, p13).

Based on the previous discussion we can see that the digital aspect has been mentioned in all definitions, making it the main common feature that covers all forms of what have been labeled as virtual, or e-money, before and after the emergence of the first cryptocurrency in 2009. Accordingly, Figure 1 presents a classification of the various types of digital currencies indicating the position of cryptocurrencies within this taxonomy.

Figure 1: Types of Digital Currencies



Source: Adapted from CBJ, 2020, p.8.

The figure shows the different types of money in its digital form, i.e., the non-physical/virtual form in contemporary economies. If another type is added, the complementary currencies[3], the picture will be clearer, through which it becomes apparent that the prevailing monetary system is highly intertwined and complex. Thus, studying one type of money and/or a currency in isolation from others will lead to inadequate perception of the true nature and impact of that type. Hence, it is of paramount importance to adopt a 'holistic' approach in the route for reaching a 'sound' verdict on the cryptocurrencies.

Based on the foregoing discussion, the paper proposes the following definition of a cryptocurrency:

> 'A special type of decentralized digital currency that emerged after 2008. It relies entirely on a pure electronic system in all processes; issuance, trading, and

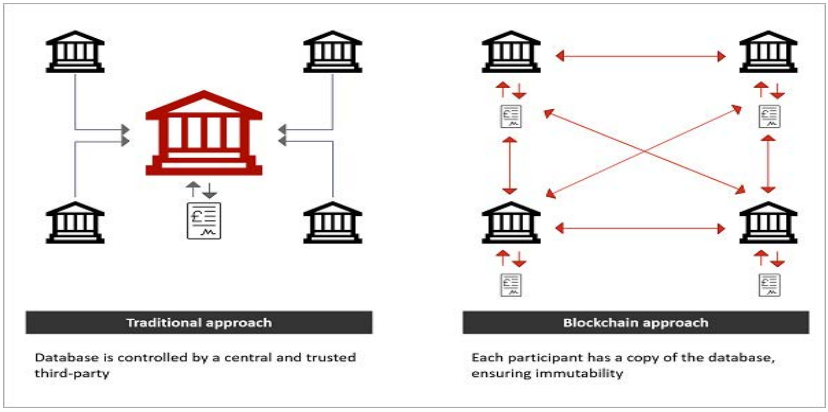
[3] Different terms have been used in the literature to describe them; some writers call them local, others community or social currencies. The umbrella that groups these initiatives is known as Local Exchange Trading System or LETS for short. Some sources (WABA, 2023) estimate the number of these currencies to be more than 9,000 globally.

distribution, through a virtual space between physical and/or legal entities who are linked through encryption-based protocols.'

Here is a quick explanation of the most important features of this definition:

1. This type of currency is digital and virtual; it is non-physical, invisible and untouchable, unlike banknotes or coins, and it operates in a virtual space.
2. It is decentralized, i.e., it is not connected with any financial institution, be it private or public. As shown in Figure 2. we find in the diagram to the left, the prevailing system all payment transactions pass through a financial intermediary, while the diagram to the right (the blockchain system) does not require the involvement of a third party, an intermediary in the dominant financial system.

Figure 2: Centralized *vs.* Decentralized Distribution System (Blockchain)



Source: Mendi and Çabuk, 2018, p.3.

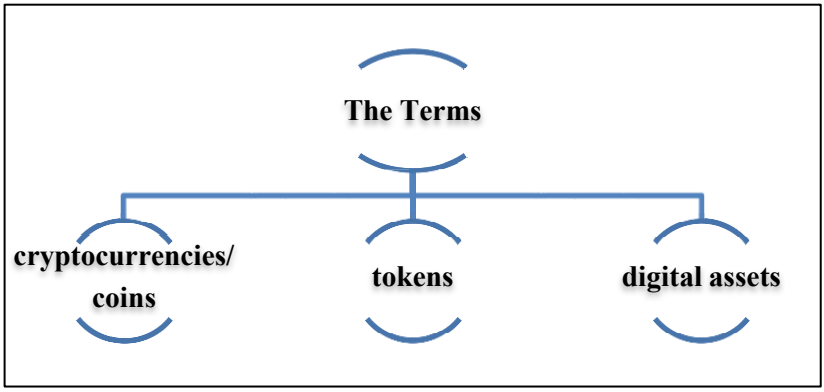
3. The date for the appearance of the first scientific work, Satoshi Nakamoto's paper, is included in the definition. This is because it represents a milestone that contributed to the emergence of the first ever cryptocurrency; Bitcoin, in 2009. This element is very crucial because it removes the confusion, that the researcher came across, in many writings that labels

cryptocurrencies sometimes virtual and sometimes e-money, or both, without realizing or indicating that these two terms existed well before this date.

4. Confined use in a specified and 'special' space; a virtual not physical space, and between limited dealers. Therefore, it is of 'limited' acceptance, and not as general as is the case with official legal tender currencies.
5. The issuance of these currencies is based on the cryptographic protocol provided by the technology of blockchains, which makes these currencies radically different from all forms of previous electronic or virtual currencies.

Thus, the definition constitutes the elements of 'exhaustivity', that provide clear-cut distinctive features of cryptocurrencies from previous forms of virtual, digital, or electronic money. For more clarity and precision in this respect, it is necessary to distinguish between three terms as shown in Figure 3, which are addressed in the literature and used interchangeably in most studies.

Figure 3: Overlapping Terms Used in Literature of the Crypto Ecosystem

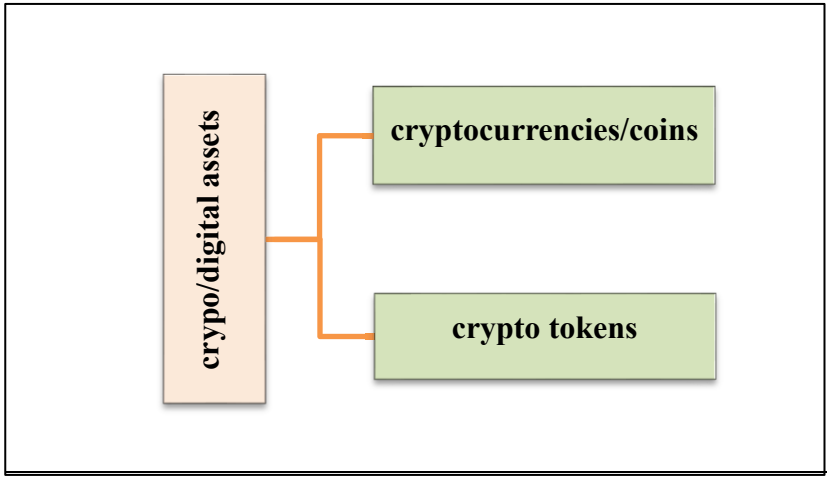


Source: Author's Own

These terms are often, as mentioned earlier, used interchangeably in most of the literature of the crypto ecosystem, but there are differences and sequence of order and/or class and sub-class classification (Howell, 2022). According to CPS (2021b) and Howell

(2022) cryptocurrencies and crypto tokens are sub-classes of digital assets as displayed in Figure 4.

Figure 4: Categorization of Crypto Assets



Source: CPS, 2021b; Howell, 2022.

The broader definition of digital assets portrays the non-tangible nature of these assets. Thus, they can be "created, traded, and stored in digital formats on a blockchain", (Howell, 2022). However, there are two essential differences between cryptocurrencies and crypto tokens: technical and economic. The technical aspect indicates the fact that each cryptocurrency, such as Bitcoin or Ripple, has its own and unique blockchain and protocol, while "tokens" use a blockchain designated to a particular cryptocurrency, i.e., "tokens [like the ERC-20 in the Ethereum currency] are created on existing blockchains", (Laura, 2023).

Therefore, creating cryptocurrencies is more difficult than creating tokens. In practice, we find that the applications of tokens are numerous, including smart contracts, attracting capital, as in crowdfunding. Thus, tokens or "tokenization" is the process that involves the digital representation of real (physical) assets on distributed ledgers … to create a class of securities such as stocks in digital form through initial coin offerings (ICO) metaphor, and/or to create a smart contract that replaces the 'traditional' contracts that we

all know, (OECD, 2020, p.7; CPS, 2021b; Reiff 2021; LIG, 2021; Laura, 2023), while cryptocurrency is a unit of measurement or a medium of exchange in a specific blockchain, it can perform two main functions: (1) sending it to another party, such as sending money to a relative or friend for any reason other than buying and selling, and (2) paying for transaction fees in the system, (SRB, 2020, p.5), and on top of that a cryptocurrency may perform the store of value function (Howell, 2022). These three functions signify the economic difference between the two terms. In this perspective, cryptocurrencies perform some sort of functions equivalent to prevailing forms of money and currencies that people deal with, while tokens take various forms like "…work tokens, utility tokens, asset-backed tokens, revenue tokens, equity tokens, buy-back tokens. In theory, a token holder can gain a share in equity, have rights to access as service or utility, have a claim on an asset or have entitlement to cash flow", (SRB, 2018, p.2).

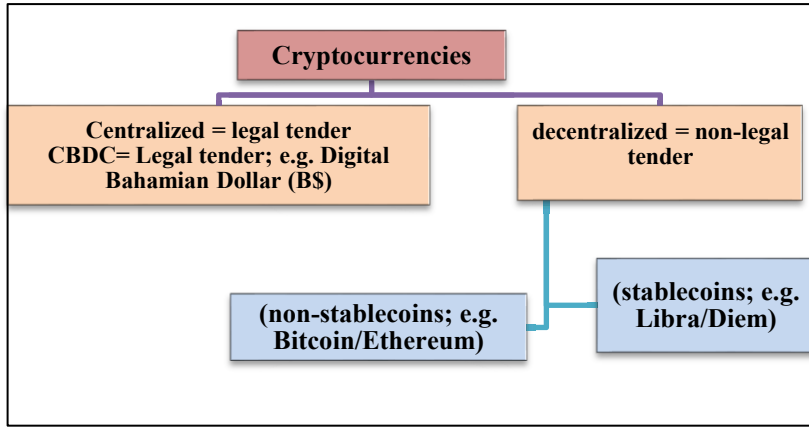
2.3 Cryptocurrency Types: Stable Vs. Non-stable Coins.

There have been many approaches to differentiate between various forms of cryptocurrencies in the literature. Centralized vs. decentralized is one of them. Stable and nonstable is another. In what follows is a brief discussion of these classifications:

- Centralized: are issued by public institutions, like central banks and monetary authorities, representing governments and states. In the introduction of this research, we showed that governments are very active, at various levels and capacities, to explore the possibility of introducing a CBDC in their local jurisdiction.
- The Decentralized: are issued by private parties, outside the laws and regulations of the prevailing monetary system. These currencies are, in turn, divided into two types: Free or non-stablecoins, which are the most prominent in practice, and stablecoins, such as the Facebook Libra currency project (LIBRA/Diem), which has received attention and follow-up since the publication of the first version of the working white paper in 2019, and then the update that followed in the year after (LAM, 2020; Massad, 2020, pp.12-18). The main rationale behind issuing stablecoins is to lessen the extreme volatility of

their values, as it has been the case in free or non-stablecoins like Bitcoin and Ethereum (Brainard, October 16, 2019). The Financial Stability Board (FSB) defines a 'stablecoin' as "a crypto asset that aims to maintain a stable value relative to a specified asset, or a pool or basket of assets" (FSB, 2020, p.7). A more vibrant definition reads "stablecoins are kinds of cryptocurrency whose value is pegged to a fiat currency like the U.S. dollar, other cryptocurrencies, or a commodity like oil or gold", (Reaume, 2021). In fact, the use of the pegging mechanism, to attain value stability, is not new. The fluctuations in the values of banknotes after relinquishing fiat currencies from gold in the early 1970s. Moreover, the ineffectiveness of monetary policies to control the size of the money supply, made some economists to call for reforming the monetary system by pegging the process of issuing money to assets or commodities (Andolfatto, et al., 2016; Lietaer, 2017). Furthermore, some emerging economies like Thailand before the eruption of Asian crisis in late 1990's, and Saudi Arabia pegged their currencies to the U.S. dollar.

Figure 5: Cryptocurrency Types: Centralized *Vs*. Decentralized



Source: Author's Own

Based on the above proposed definition, and on the foregoing discussion, one can easily exclude, from that definition, all previous

forms of electronic digital money that existed before 2009, such as the wholesale money of central banks that they issue to commercial banks, and the money that commercial banks create when they provide credit facilities to their customers. We can also exclude all forms of virtual money that are traded via the Internet like (World of Warcraft (WoW) Gold), (ECB, 2012, p.13). Therefore, the aimed at jurisprudential verdict is confined to stable and non-stable privately issued cryptocurrencies, like Bitcoin and Tether respectively.

3.0 Two vital Issues that did not receive due consideration in Islamic Economics and finance Literature (IEFL)

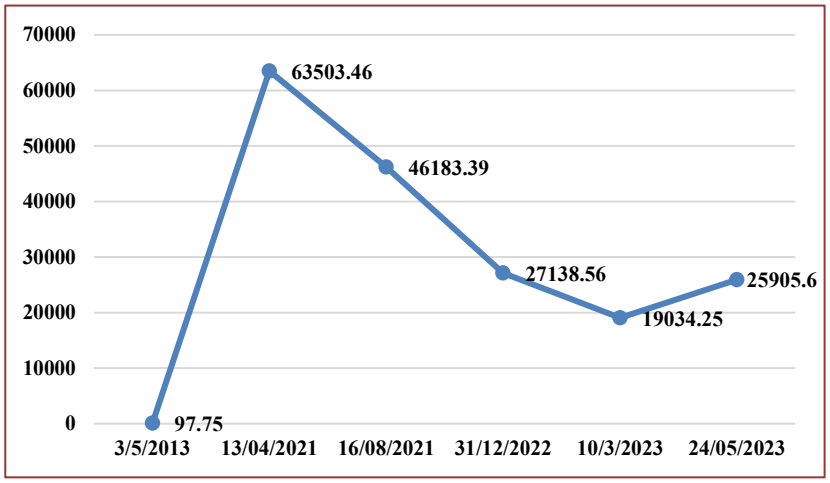
Besides the elaboration of an all-encompassing definition there are vital issues that affect reaching a sound *Sharī'ah* ruling on cryptocurrencies but did not receive due consideration in IEFL. Among these are: intrinsic and market values of cryptocurrencies on one hand, and cryptocurrencies and the opaqueness of the monetary ecosystem in modern economies on the other.

3.1 Intrinsic Value Vs. Market Value of Cryptocurrencies

Although Bitcoin has been presented in the Nakamoto (2008) paper as an electronic cash system - as previously explained - the persistent reality on the ground shows that it is very far from this perception; it is linked to very high-risk practices which have contributed significantly to its extreme volatility. This pattern led some entities and economists to label Bitcoin and the like of cryptocurrencies as "behaving more like a speculative investment than a currency" (BIS, 2021, p.67; Yermack, 2013, p.16).

Figure 6 depicts this pattern over the span of a decade. These fluctuations, in Bitcoin values, are so extreme because they have no connection to real economic activities. It is evident that this movement in price of Bitcoin may exhibit a bubble pattern that could lead to the loss of all 'invested money' or that money will grow to an unprecedent height in a very short period. Thus, the end result is a zero-sum game.

Figure 6: 1BTC *Vs* US Dollar on Different Dates



Source: Coinmarketcap (2023)

This pattern necessities a thorough examination of the factors that may have contributed to this stalemate that has taken Bitcoin from the main objective of its emergence as portrayed in Satoshi's paper; 'to act as a pure electronic cash system in the virtual world'. Quite simply, the reality of these currencies is that they are just numbers and/symbols generated by programs stored in blockchains on computers scattered over a virtual space in different parts of the globe. Therefore, they have zero intrinsic or true value, (Andolfatto, 2014, p.9; BIS, 2015, p.1), unless we consider them from the perspective of the cost of issuance, i.e., the length of time, and other human and material factors of production involved in this process of their issuance. Pursuing this methodology to estimate the intrinsic value of these currencies is difficult to attain. They are neither regulated nor traded and treated systematically at the global level. Moreover, this route of evaluation is subject to the prevailing circumstances, which vary from one miner to another, and from time to time as well. If this is the basic reality of these currencies, from where do they derive their exorbitant value on exchange platforms? This is a very cumbersome question. For this reason, the economic literature that tried to provide an answer to this question is so diverge in its exploration. Here is a summary of some of the explored reasons in the literature that the

author has been able to extract (Ali et al., 2014, p.280; Andolfatto, 2014, p.22; BIS, 2015, p.1; Frankenfield, 2019; Kelleher, 2021):

- The expected real return from holding the cryptocurrency in exchange for other options in which a person can invest his/her money.
- The risks associated with holding a cryptocurrency like any other currency; risks such as price volatility, fraud, and theft.
- The utility factor which relates the value to the belief that cryptocurrencies might be exchanged for other goods or services, or a certain amount of sovereign currency, at a later point in time", (BIS, 2015, p.1).
- The relative benefits expected to be gained from using cryptocurrencies as a medium of exchange, as opposed to abandoning the use of fiat currencies. These benefits include ease of use, transaction costs, and anonymity, the technological application factor.
- The network effect: the larger the trading network for a currency, the more it facilitates transactions, which positively affects the stability of its value. This is not currently applicable for cryptocurrencies, as their dealing networks are very limited, which may have contributed to the extreme volatility in their market values.
- Supply and demand in attaining these currencies as store of value due to the devaluation that characterizes fiat currencies in the long term, and some even in the short term. When demand is high, and supply is limited, as in the case of gold, but far from being at par with Bitcoin, this will put pressure on demand, which contributes to the rise in the values of these currencies.
- Impact of country and/or business attitudes. Examples of this include the attitude of the Chinese authorities in May of 2022 towards the mining and trading of currencies in the country. It turned a blind eye to them for a while, then instructed the banks to ban dealing with them.
- Scarcity is factor that may affect the intrinsic value of a cryptocurrency like Bitcoin whose volume is limited twenty-one (21) million Bitcoins, (Phemex, 2022).

To the aforementioned we can add the factor of persistent deteriorating of public confidence in the prevailing fiat monies as a store of value, as indicated earlier. This trend affected the behavior of people to get hold of a 'safe haven' asset to preserve the real value of their balances and savings. There is also the 'tempting' factor on easy wealth, especially during difficult times, such as the Covid-19 pandemic, in which many have suffered from unemployment and a lack of other sources of income opportunities. And in times of high inflation people get rid of the currencies they have quickly to avoid the negative impact of holding them for long.

If that has been the case for fiat Money whose trust is backed by issuing governments all over the globe, then the severe fluctuations of the market values of Bitcoin, as displayed before, on one hand, and "'transferring' the functions of governments to an algorithm within the Bitcoin universe" on the other, raises a fundamental question: Is Bitcoin a bubble, good investment or 'good money'? A US Federal Reserve official answers yes, based on the following simple equation, which is used to calculate the liquidity premium (Andolfatto, 2014, p.21) for long-term assets that are traded in the foreign exchange markets: *Bubble = market price of an asset – its intrinsic value*. If the intrinsic value of an asset is zero (0) as proclaimed by Andolfatto, 2014, p.9, this implies that the evolving market value of Bicoin is no more than a bubble because it is not based on a real activity from which it can derive some of its value, as is the case with stocks. In fact, the bubble aspect is most evident in the extreme volatility that the currency has experienced over the past few years. For example, "In 2017, the value of Bitcoin increased by 1000%, then lost 80% of that value at the beginning of 2019, and then it rose again with a growth rate of about 800% at the beginning of 2021" (Saxo Bank, 2021). There are no sound and objective reasons for such a very volatile behavior.

Having said that it must be noticed that there is a fundamental problem with the previous proposition is the fact that the market prices of almost all assets, be it financial or real such as gold and oil, do have an a 'bubble' element through the speculation practices that dominate these markets. If this is the case as has been acknowledged by Andolfatto (2014) and others, this stalemate requires thorough investigations, theoretically and empirically, to figure out well-defined

criteria that draws clear-cut boundaries between the "bubble and non-bubbly assets". As we all know, financialization which makes financial activities dominate the economic scene with their overvalued prices of financial assets and services. Those values have lost adequate connection and alignment with their counterparts in the real sector.

3.2 Cryptocurrencies and the Peculiarities of the Monetary Ecosystem in Modern Economies

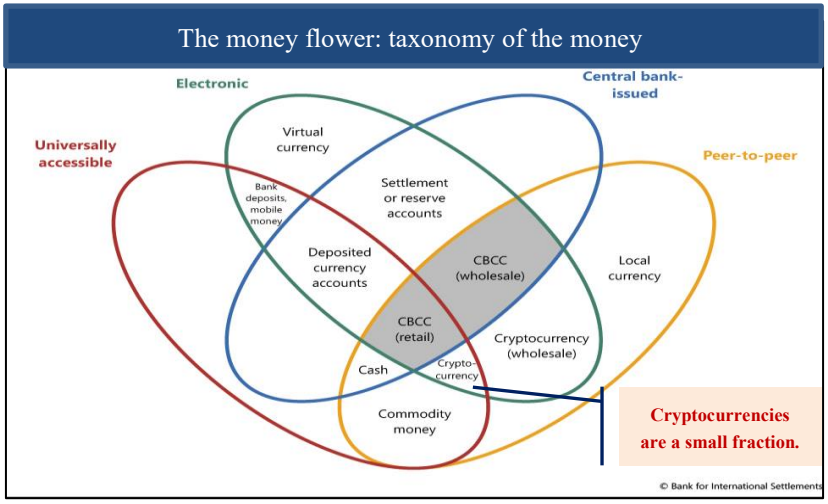
The issue of money, its nature, source of origin and impact is a very complex and delicate topic. Some prominent economists like the late American economist John Kenneth Galbraith noticed, in 1975, that "the study of money, above all fields in economics, is the one in which complexity is used to disguise truth, or evade truth, not to reveal it", (Galbraith, 2017, pp.17-18). Recently some economists iterated, in a different way, the assertion of Galbraith that is still relevant for the stance of neoclassical economists, and those who follow in their footsteps knowingly or unknowingly. In this regard Keen (2022, p.20) stunned the readers in one of his recent publications stating that "most people who have not studied economics expect economists to be experts on money. However, … Neoclassical macroeconomics effectively ignores banks, private debt, and money …". The story of the neoclassical economists with their neglect of money and the role of private banks in the process of amplifying crises and the culmination of debt all over the globe, did and has not received the due contemplation it deserves in most of contemporary treatises in the economics' profession.

The taxonomy of modern monetary ecosystem displayed in Figure 7 shows explicitly the complexity of the various types of monetary arrangements. Thus, dealing with one type of money/currency in isolation from the complex taxonomy of other types will not serve the purpose of reaching a sound *Sharī'a*h verdict, as many studies do not address the complexity and ambiguity surrounding the functioning of the prevailing monetary and financial system, let alone to liaise the very small part of privately generated cryptocurrencies to the ocean of the opaque monetary system. One may conclude that there is a resemblance, to a certain degree, between the stance of some Muslim jurists and economists, and those of their

mainstream counterparts in their indifference to the 'money matter' as produced and distributed in contemporary economies, (Keen, 2022, pp.20-74).

Therefore, it is of paramount importance to adopt a holistic approach in studying one type of the very sophisticated and intertwined web of various forms of money. And this applies to the case in dealing with cryptocurrencies: why they have emerged? How significant are they? Do they share some core and impactful features with the prevailing and dominant forms of money that play a pivotal role in economic activities and financial decisions?

Figure 7: The Complex and Opaque Modern Monetary Ecosystems



Source: The money flower: taxonomy of the money (Bech & Garratt, 2017)

Addressing the previous questions in a thorough and extensive manner is far beyond the scope of this research. However, it is apparent that the market for cryptocurrencies is still in its early stages of development, and the high volatility of some currencies has contributed significancy to the shrinking of the market capitalization value in recent years. More importantly, they do share some core features with the prevailing money that most of us deal with as we will see in the next paragraph.

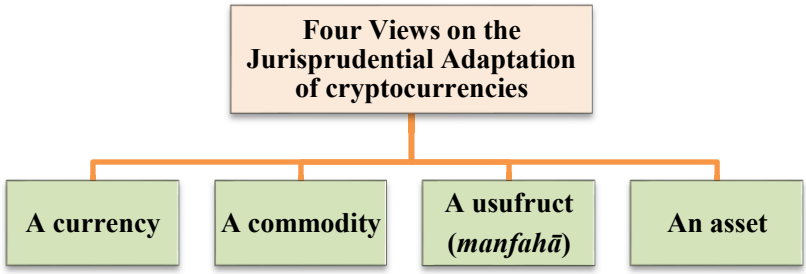
It is also important to note that those who have prepared, be it a single person or a round table of experts, the 2008 white paper of Bitcoin electronic cash were aware of the fact that majority of the money that we use is privately created by banks. Thus, this dominance of banks on the 'issuance and distribution' of a vital 'common good (i.e., money) is not a fair for societies, so why not to seek an alternative route that may break the deadlock surrounding this matter; as if it is the only and the very efficient way of 'producing' money that economies need to lubricate the circulation of goods and services in modern economies.

Hence, the question, 'why the inception of Bitcoin?' in the first place is a very crucial and relevant question that receives little consideration in the literature of the crypto ecosystem. This represents one of the paradoxes that engulfs almost, all, the literature that have dealt with this issue from the Islamic *Sharī'ah* viewpoint. In contrast to that some conventional literature that shed light on the issue "the main reason for proposing a distributed ledger payment system with Bitcoin as an alternative currency is the disenchantment of Nakamoto (2008) with the banking system for money creation" (Huibers, 2021, p. 2).

4.0 The Jurisprudential Adaptation of Cryptocurrencies

The main goal of jurisprudential adaptation, as well known to the specialists in this field, is the process of "exerting the utmost possible effort to determine the reality of an emerging incident (*nazilāh*), according to the rules of jurisprudence, in preparation for reaching an appropriate ruling on it", (Almosleh, n.d.). Considering the above-mentioned discussion of the reality and types of these currencies, and the literature reviews, the jurisprudential adaptation is confined to four opinions as presented in Figure 8. It must be emphasized that the jurisprudential adaptation, in this study, is limited to the stable and nonstable privately issued cryptos like the Tether USDt and Bitcoin.

Figure 8: Views on the Jurisprudential Adaptation



Source: Author's Own

1. The first view regards cryptocurrency as a currency (*thaman* - price). Thus, it performs at the very least the two basic functions of money; the medium of exchange and unit of account to facilitate the exchange of goods and services as explored in economics and jurisprudence literature.
2. The second view regards cryptocurrency as a commodity (product). It is demanded of itself to satisfy a need and/or an ultimate desire of the buyer.
3. The third view looks at cryptocurrency as a usufruct (*manfā*) that entitles the holder 'the legal right to use it temporarily and to keep any profit made from it'. Thus, "a usufruct is a benefit derived from an asset/property being provided or leased by a party to another", (FiNcyclopedia, 2023).
4. The fourth and last view regards cryptocurrencies as an assets like other financial assets, such as stocks and bonds that are traded in markets, but they are in digital form; they can neither be touched nor traded in existing conventional secondary markets.

The more probable of these opinions is the first, while the second is completely excluded[4], the third is related to tokens rather

[4] Certain studies have described cryptocurrencies as 'digital commodities' (Ali et al., 2014, p.278) as a synonym for the term digital asset, and others declared "… cryptocurrencies like Bitcoin to be commodities", (Massad, 2020, p.7).

than currencies, and the fourth has been developed during practice and work, which made the behavior of their market prices closer to excessive risk and speculation rather than to sound investments. This proposition is supported by the following:

1. The starting point is the assertion made in the landmark white paper of Satoshi Nakamoto. It was stated from the outset that the main purpose of Bitcoin's invention is to create "a purely peer-to-peer version of electronic cash [that] would allow online payments to be sent directly from one party to another without going through a financial institution" (Nakamoto, 2008, p.1). This assertion has been supported by using Bitcoin to buy pizza in 2010 (CBIs, 2021, p.8). In addition, some companies, such as Tesla, accepted it at some point as a payment method[5], and then stopped accepting it[6]. In addition, different stores are accepting cryptocurrencies for the purchase of some of their goods and services. According to some sources there are about thirty-three (33), including nine big companies like Microsoft that accept these currencies as a medium of exchange, (Tuwiner, 2023; Tutorials Freak, 2023). Moreover, in September 2021, El Salvador adopted Bitcoin as its second legally recognized national currency alongside the U.S. dollar. Thus, making it the first nation to adopt a digital currency as legal tender, (Martin, 2023).
2. Cryptocurrencies were used by some parties, individuals, and companies in the USA through the initial coin offerings (ICOs) to raise capital, (SEC, 2017). The US Securities and Exchange Commission (SEC) considered ICOs as a tool that "may provide fair and lawful investment opportunities", (SEC, 2017). The SEC's Office of Investor Education and Advocacy has issued 'the Investor Bulletin' relating to cryptocurrencies "to make investors aware of potential risks of participating in ICOs", (SEC, 2017).

[5] Tesla published a note titled "What You Need to Know If You Use Bitcoin" to explain to their customers how to use Bitcoin "to purchase eligible Tesla products and services", (Tesla, n.d.).

[6] On May 13, 2021, Elon Mask, Tesla's CEO, twitted that "Tesla suspended vehicle purchases using Bitcoin"; https://shorturl.at/yGOPV.

3. Essentially, most of the studies that I have reviewed dealt with cryptocurrencies from the 'money' perspective, even if they have used different terms such as assts or tokens. I think this signifies the two stances that have been attached to these currencies: the stance that views them as money and the other that considered them as an investment 'opportunity'. The latter was the result of the developments that took place over the years that portray the very big fluctuations in the market value of these currencies. For instance, authors of the study conducted by Congress (Perkins, 2020, pp.7-12) described cryptocurrencies as a new type of "money", because "they have the potential to be an alternative to [fiat] money, for their efficiency in reducing the costs of payments that require [third-party mediation]". On the other hand, the FATF considered these currencies as "the forthcoming structure of the payments system", (FATF, 2014, p.3).
4. The emergence of stablecoins as a remedy to the highly volatile nature of the "free or unstable" currencies such as Bitcoin, which supports the view that consider them as currencies in origin and formation.
5. As mentioned earlier, several central banks are considering the issuance of their official digital currencies (CBDCs), and some intended to issue them to be used along with, or to entirely replace, the prevailing fiat money. There is no doubt that one of the factors that has contributed to this trend is the emergence and the ongoing development of private cryptocurrencies more than a decade after their emergence.

Based on the previous discussion a vital question arises: to what extent do basic features of money, as portrayed in economics and jurisprudence literature, apply to cryptocurrencies?

Primarily, it must be acknowledged that the use of these currencies is still very limited, even banned in many countries. This deprives them of the feature of the wide range of acceptability as a medium of exchange either from wide public support or government enforcement, i.e., the power of a public authority to compel people to use a certain form of money like fiat money. This public power played

a key factor that gave fiat money the legal tender status[7]. However, this does not deprive them of some sort of limited acceptance, as is the case in complementary currencies, which preceded their appearance quite some time ago. Moreover, the most important cited objections submitted to deprive cryptocurrencies of the status of "money or currency" can apply to other currencies that are widely used in modern economies. Reviewing the abundant juristic literature that have dealt with the *Sharī'ah* ruling on cryptocurrencies reveal the following factors as reasons to reach their injunction:

1. Cryptocurrencies are just mere numbers or symbols generated through complex algorithms by private parties connected virtually through a network of computers dispersed in different parts of the World. The argument goes on to state that these currencies are not backed by anything, but rather created out of 'thin air' in a digital form.
2. They are unstable, highly volatile, and very risky. This makes their market behavior to be speculative leading to the destruction rather than the preservation of wealth.
3. Cryptocurrencies can and/or have been used for money laundering and other illicit activities.
4. Another argument cited against the permissibility of cryptocurrencies related to the anonymous feature of the parties involved in their creation. Thus, they do neither have the status of legal tender, nor the supervision and support of a third party be it public or private intermediary.

In what follows a thorough exploration of these arguments shedding light on important issues that did not receive due consideration in Islamic economics and finance literature.

1. Regarding the matter of the issuance of cryptocurrencies digitally by private parties, it is of prime importance to the

[7] In contrast to the emphasis given to the general acceptance factor in the definition of money in economics literature. As it is well documented that countries and societies were, in fact, forced to use fiat money after the USA's decision in 1971 to abandon the convertibility of US Dollar into gold, i.e., the collapse of the Bretton Woods international monetary agreement that was enacted in 1944 (Ghosh, 2021).

ongoing debate about the permissibility or otherwise of these emerging forms of money. In 2014 the Bank of England (BoE) revealed, for the first time, that most (+ 90%) of the money in circulation in modern economies is created, *ex-nihilo*, through accounting rules with the backing of monetary authorities rather than through the money multiplier 'myth' as widely acclaimed in economics textbooks, by privately owned commercial banks. The document published by the bank explains this process as follows: "when a bank makes a loan, for example to someone taking out a mortgage to buy a house, it does not typically do so by giving them thousands of pounds worth of banknotes (collected from savers). Instead, it credits their bank account with a bank deposit of the size of the mortgage". At that moment, according to the document, new money is created. Unlike the lending process, the repayment process represents the other side of the process, which is the "destruction of money" or the disappearance of this new type of money" (McLeay et al., 2014, pp.1-4)[8]. Moreover, these monies are not backed by any tangible assets or commodities like gold or silver. Their values rely entirely on the regulations and economic foundations of the countries that issue them. Advocates of this process of money creation may argue that the supervision and control of central banks boosts confidence and stability in the system, as opposed to the case in the crypto ecosystem. There is no doubt that this element makes a difference between the two systems in this respect. However, when one thinks thoroughly of the far-reaching consequences of this process and its implications as explained in footnote 8, the scapegoat argument of the backing of monetary authorities does not hold firm.

[8] However, what this document fails to highlight is the fact that interest and principal amounts remain as a debt on the borrower who must repay in 'hard currency' that he/she worked hard to earn. Herein lies the danger and the 'immoral' practice in this type of money. Banks create money through sophisticated methods, out of 'thin air', and the borrowers eventually repay them from their hard work. And, if they fail, due to reasonable and difficult circumstances they will be black-listed in the credit worthiness records.

2. Speculation and betting aspects that led to the high volatility of market values of cryptocurrencies are entirely true; some figures and data have been provided in previous sections supporting this annoying feature. One of the solutions that have been proposed to lessen the effects of this problem is the creation of stablecoins, as previously explained. On the other hand, the fiat money that people use is subject to instability and a continuous depreciation in real values too, but in a far lesser way. In addition, stability is relative, as it is well known. For instance, in the early days of the emergence of fiat money, it did not enjoy the characteristics of stability and general acceptance (Bouveret & Haksar, 2018, p.26). However, over time, it gained these characteristics through the intervention of governments with their power to enact the acceptance of fiat money as a legal tender. This is an area of long debate and discussion because it reflects the tumultuous monetary history of western societies, which is the main origin of modern monetary systems. Thus, the struggle of the power who controls money: the state, or the private sector. While acknowledging this exasperating aspect of the cryptos it must be noted that this standoff raise, at the same time, important questions relating to the exploration of the reasons that may have contributed to this situation: Is it related to the widespread practices of speculation in the prevailing financial markets? Or is it due to the loss of confidence in fiat currencies, the US Dollar in particular? These are so vital questions that must be looked at carefully before jumping to the injunction of cryptocurrencies as if they are operating in an isolated "island." Context and circumstantial factors are very influential in jurisprudential adaptation, as it is well known to specialists.
3. Cryptocurrencies can and/or have been used for money laundering and illicit activities. This is also true, but it must be treated with caution for several factors. The first is the fact that this attribute is an external factor. Thus, it does not constitute an intrinsic feature of cryptocurrencies. The second, "the use of something *lawful* for an unlawful purpose does not make the thing itself become unlawful", (Abu-Bakar, 2017, p.19). The

third, which is of paramount importance, fiat, and electronic currencies that we use widely in our transactions can and have been used for illegal activities like money laundering, fraud, and terrorism activities. Despite the heavy security measures and the very harsh punishment that are enacted all over the globe fiat currencies have been the subject of many attacks by hackers and money launderers. For example, in 2015 and 2016, a series of cyberattacks using the SWIFT banking network were reported, resulting in the successful theft of millions of dollars, (Wikipedia, 2016). Part of this operation targeted the Central bank of Bangladesh, and it has been labeled as the "Bangladesh Bank Cyber Heist". According to some analysts if this Cyber Heist "were executed successfully, it would have been the largest bank robbery in the world … [hackers] targeted, in February 2016, $1 billion, but, in the end, they had been able to fly away with only $81 million that is undoubtedly the world's largest bank heist in the history of modern time", (Business Inspection, 2021). For this reason, advocates of cryptocurrencies claim that blockchain decentralized technology is more robust and secure than centralized ones. It is beyond the reach of this research to dig more into this aspect which is of paramount importance for the stability of the monetary and financial system.

4. Lastly, the use of pseudonyms, which is known as anonymous to conceal the identity of the involved parties in the closed network of a given cryptocurrency has been debated in the literature of the crypto ecosystem. The argument for and against such a practice indicates that this aspect centers around privacy as a basic human right. Moreover, advocates of the crypto ecosystem claim that transactions in blockchain ledgers are "more traceable than cash transactions, but some cryptocurrencies were designed with anonymity and privacy in mind" (CPS, 2021a). Therefore, it seems that this issue does not constitute an impactful feature in reaching a *Sharī'ah* verdict on cryptocurrencies.

In addition to the above points, there remains an important issue as to whether cryptocurrencies are considered as a valid form of

property or wealth (*māl mutaqawwam*) from a *Sharī'ah* perspective? The prevailing international custom (*ūrf)* does recognize the very substantial value these currencies have in terms of their market capitalization as explained before. However, there is another supportive, but very delicate factor that gives cryptocurrencies a strong case for their values to be regarded as a validated form of wealth within the realm of contemporary financial and monetary practices. It is the digitization of the money economic agents use through the banking system as explained before. This money is not backed by any in-kind (gold) or cash (fiat money) as explained in the 2014 document of the BoE. The production of new money in this process depends, under normal economic conditions, on the willingness of the two parties: the bank (supply side), and the customer (demand side) to enter into a credit agreement. Whenever the two wills meet and agree on the terms of the contract, and the official documents framing the transaction are signed, new money is generated, which does not exist in the form of previously collected deposits.

Thus, by the process of granting loans by commercial banks to economic agents, new money is created in the economy, and through the repayment process of those loans the new money disappears. In other words, money, which constitutes the vast majority in the money supply, 97%[9], as in the case of Britain, are created as debts (IOUs) controlled with their proceeds by private commercial institutions and under the supervision and 'blessing' of central banks and supervisory bodies in almost, all, countries of the world.

Is this form of money considered as a validated form of property from *Sharī'ah* perspective?[10] Practically and legally, yes, it is, because most of the funds pass through financial intermediaries, and these funds are granted only after signing detailed documents that guarantee the rights of both parties; the funder (the bank) in particular. The

[9] Money in its broad sense, as defined by David Andolfatto, Deputy Governor of the Federal Reserve Bank of St. Louis, consists of two main tranches as portrayed in the following equation (Andolfatto, 2014, p.7): Money supply = Fed paper (= $) + digital dollars (digital dollars = Bank accounts insured by FDIC).

[10] So far, this study is not aware of any serious debate on this issue at the level of renowned *fiqh* academies like the IIFA, and for this reason, urges these bodies to give priority to this matter before any other forms of money.

applicant can use these funds for different purposes, including purchasing a house, a car … etc. The purchased assets, real estate in particular, are used as a surety by the lender to secure the repayment of the loan advanced to the borrower. If the borrower fails to pay back the principal plus interest on due dates, the bank can take legal measures to claim those assets to recover its "rights" on the *ex-nihilo* money they have created. These measures are conducted through the repossession/foreclosure processes as practiced in most jurisdictions that have mortgage arrangements for their citizens.

If we apply this analogy to cryptocurrencies, we will find that they are at par with the *ex-nihilo* created money. In terms of value, they are valued at more than $1 trillion as we the first week of September 2023, (Tambe, 2023). And they have grown exponentially in some jurisdictions in the past. For instance, "in the US, the combined market capitalization of digital assets grew from about $14 billion as at November 2016 to about $3 trillion as at November 2021, a compound annual growth rate (CAGR) of 193%", (PwC, 2022, p.2). It must be noted that the huge fluctuations in the market values of these cryptos indicate the very 'speculative and high risk' nature of their behavior. However, in terms of the effect on the wealth of individuals and companies their values are considered.

Finally, there remains another aspect that needs thorough investigation into this matter as well. It is the issue of the legality of the *ex-nihilo* money created by commercial banks: Do supervisory and monetary laws explicitly authorize private commercial banks to "create money" in this way? Have other routes of money issuance/creation been examined thoroughly in tandem with this method and the studies concluded, objectively and rigorously, the 'efficiency and resilience' of this method above all others?

As as been highlighted previously, the main argument is not to jump to the conclusion of the permissibility or otherwise of these currencies, rather the main synthesis is to emphasize the fact that the subject of money is very complicated and cumbersome, studying one form of it in isolation from the intertwined web of other form will not do justice in reaching a sound verdict from a *Sharī'ah* viewpoint.

5.0 Conclusion

This study sought to identify some vital issues that will help in reaching a proper and sound jurisprudential ruling on private stable and unstable digital cryptocurrencies. This study has devoted considerable attention to elements that have not been addressed and/or discussed and analyzed by previous studies. Accordingly, the following concluding notes and recommendations can be made:

1. This study affirms the IIFA Academy's description of cryptocurrencies (IIFA, 2019) rather than virtual, digital, or electronic money. It considers this description the most appropriate at the current stage because it refers to the cryptography feature, which did not previously exist in other forms of money in its digital or virtual form. Besides the technological developments of the DLT, which made it possible that parties to deal with each other in a peer-to-peer process without the involvement of a third party whose main rule is to assure trust. For this reason, this research noted a big confusion in the literature between the two terms digital currency and e-money. This has been, mostly the case, in literature written in Arabic. BIS (2015, p.17) provided a crystal-clear difference between two; "the distinction between digital currencies and e-money lies in the associated technological innovation and its impact on the concept of settlement. Settlement in this context means a common agreement that a transaction has taken place. E-money is technologically similar to existing payment systems in that a trusted central party operates a ledger to which everyone in the system refers; settlement still requires a trusted central entity". This distinction is of vital importance to unveil the jurisprudential stance of digital currencies. They have a fundamental feature that makes them distinct from all forms of e-money that the world has seen before the emergence of the first digital currency in 2009. For this reason, the study added the time factor to the definition because it is pivotal in confining the precise type of currency under investigation to reach a ruling on it.

2. The issue of money in contemporary economies is complex and tricky. Cryptocurrencies are only a tiny bit in a highly intertwined web of various forms of money. Therefore, studying this type of currencies in isolation from this web may result in a lack of a proper perception that can lead to a defective judgment. The study devoted a large part of discussion to the *ex-nihilo* money created by private commercial banks.
3. The jurisprudential adaptation of cryptocurrencies ranges between two viewpoints: a currency (price) and a digital asset. The first description is supported by origin, as explored in Satoshi Nakamoto's paper and in some other reports and studies. It is also supported by some practices in different parts of the world. The second is supported by practical reality, as well as by the well-versed conclusion of many reports and studies. Which one of them has the prevalence? This question requires thorough examination, which seems as yet, difficult to obtain.
4. This study concluded that cryptocurrencies do have in practice, substantial market values, and these values are recognized worldwide. Thus, they have been regarded as a form of wealth, especially in jurisdictions that have recognized their values for tax and other purposes. However, there are still problems and questions that need for further examination regarding the legitimacy of the fortunes that some parties may attain in dealing with these currencies, at the practical level, in Islamic countries that ban dealing with these currencies, for zakat and other charitable purposes, are of paramount importance.
5. This study, as stated before, makes an urgent appeal for the IIFA and other renowned *fiqh* academies to devote special symposia to the issue of the *ex-nihilo* money created by commercial banks. This form of money constitutes a major portion of the money supply in modern economies. Moreover, the far-reaching consequences that need to be evaluated thoroughly from various angles; *Sharī'ah*, law, social, economic, environmental, and even political context through a holistic approach that take into account the historical and struggle developments of the evolution of this issue in the monetary history Western societies.

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